



SEA GRANT CONTRIBUTIONS TO THE NATION IN

# SEAFOOD SCIENCE AND TECHNOLOGY

## ENSURING GLOBAL COMPETITIVENESS OF THE U.S. SEAFOOD INDUSTRY

The goal of the Sea Grant Seafood Science and Technology Initiative is to enable the seafood industry in the U.S. to increase its global competitiveness by helping the industry increase quality and safety, add value, lower costs, and expand seafood supplies and markets. Sea Grants seeks to accomplish this goal by building on its proven track record of collaboration by university research and extension personnel with business, government, research laboratories and consumers.

### Sea Grant Produces National Benefits

Recent investments by Sea Grant in seafood science and safety programming has resulted in the following outcomes:

- Created the National Seafood HACCP Alliance, which earned the 1999 U.S. Secretary of Agriculture's Group Honor Award for Public Service for efforts to improve seafood safety and a 1997 Hammer Award for "partnerships that make a significant contribution in improving the way federal agencies accomplish their responsibilities."
- Delivered training courses enabling more than 15,000 individuals in industry to comply with the nation's first mandatory food-safety regulations based on HACCP. Eighty-three percent of American seafood businesses reported that they could not have met federal regulations without those courses.
- Reduced food-borne illnesses by 23 percent since 1996 in the United States as reported by the Department of Health and Human Services through HACCP training courses. This program is the model now used to train U.S. producers of juice products to help them implement a HACCP food-safety system.
- Provided research and technical assistance on proper food safety and handling techniques that helped establish a fresh and frozen albacore tuna industry on the West Coast. This effort led to undated FDA standards for tuna, which has the highest per capita consumption of seafood product in the U.S.
- Adapted and developed technology enabling the use of Pacific whiting in surimi. The new industry generates more than \$40 million annually.
- Identified sources and controls for the human pathogen, *Listeria monocytogenes*, which allowed Atlantic crab processors to comply with federal and state regulations and meet the needs of major commercial buyers, a \$3.7 million value annually.
- Recommended changes at processing plants in Alaska, Oregon and Washington that are saving an estimated \$1.1 million annually in reduced energy consumption, reduced waste and increased productivity.
- Created a market for whiting as an ingredient in fertilizer, meal and compost.
- Developed heat-intensive processing techniques for surimi gels that are saving seafood manufacturers \$1.8 million annually.
- Developed a high-value "scallop medallion" from small scallops, increasing demand for small scallops by 10 million pounds per year since 1999. The project has led to the creation of "married" shrimp and lobster products.
- Helped create the Maine Phytoplankton Monitoring Program to prevent shellfish poisoning. The program won the FDA's prestigious Team Award in 2001.
- Developed anti-microbial treatments for shrimp, saving Florida's shrimp processors \$12 million annually.
- Developed a technique for limited freezing of oysters that reduced the levels of *Vibrio vulnificus*. The technique provides processors with a consumer-safe alternative marketing strategy.
- Identified iced seawater-freshwater mixtures for best salmon quality and documented maximum holding times at sea. Salmon fishermen utilized data and reduced fishing trips from 17 days, in some cases, to 4-6 days maximum, improving salmon quality for consumers.
- Demonstrated the effectiveness of bleeding albacore at sea to improve quality, which led to expanded markets for fresh and frozen consumer products.

### Building the Future on Successes of the Past

Sea Grant has achieved an extraordinary record of economic and environmental accomplishments through its seafood science and technology program. Public invest-

ment in the seafood sciences will create new opportunities to both sustain and expand the U.S. seafood industry and create millions of dollars of new income and thousands of new jobs. Through a proactive partnership effort, seafood safety and quality can be increased, making seafood safer and more affordable for consumers while at the same time improving the ability of U.S. industries to compete globally.



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